INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS OF RWANDA

Driving Sustainable Performance

Associate of IFAC

CERTIFIED PUBLIC ACCOUNTANT

ADVANCED LEVEL 2 EXAMINATIONS

A2.2: STRATEGIC PERFORMANCE MANAGEMENT

FRIDAY: 09 JUNE 2017

INSTRUCTIONS:

1. **Time Allowed: 3 hours 45 minutes** (15 minutes reading and 3 hours 30 minutes writing).
2. This examination has one case study.
3. Show all your workings.
4. All iCPAR Examination rules and regulations apply.

CASE STUDY

NC Group was founded by Mr. Njenda Callixtus in the 1960s with its headquarters located in Gicumbi district of Northern Province and subsidiary companies in Nyamagabe district of Southern Province. NC Group owns Ruhengeri Sugar Factory (RSF), Nyamagabe Dairy Farm (NDF), Nyamagabe Modern School (NMS) and Nyamagabe Resort Hotel (NRH). NC Group recently got a new Board chairman with two new non-executive member directors. The new Board held its first meeting in January 2017 and made the following resolutions;

Automated information management systems

During the meeting, members established that there was a lot of information delay from the group members. The subsidiary companies in Southern province were pinned for late submission of reports to the head office and there was no integrated system for all group members. This surprised the Board chairman who proposed immediate development of an integrated automated information management system that will facilitate easy monitoring of all group members' activities for informed decision making. Board chairman reminded the members that board's responsibility is to give strategic direction to the group. Members discussed the need to monitor external environment since it affects the business directly in different aspects. Information technology is the only way to survive in business because it facilitates information management.

Performance review and planning of NC Group members

1. **Ruhengeri Sugar Factor (RSF)**

RSF deals in production and distribution of sugar in the Northern Province with annual production capacity of 1,750 tonnes. RSF owns 250 hectares of land of which 125 hectares are covered by sugar cane plantations. There are also sugar cane out-growers in the region who own sugar cane plantations covering 50 hectares.

RSF harvest 60 tonnes of sugar cane from one hectare of land per year but out-growers harvest 70 tonnes per hectare. 10 kg of sugar are produced from 100 kg of sugar cane. NC Group Board proposed disposal of RSF due to its persistent poor performance for the last four years with the worst performance recorded in the year ended 31 December 2016 with a loss of Frw 158,375,000. RSF had budgeted to make a profit of Frw 25,172,800 for the year 2016. The Board noticed that RSF was operating below capacity. However RSF General Manager explained that the situation was worse due to increased costs of production amidst low priced imported sugar. He proposed leasing out the land with sugar cane plantations to a willing person because the cost of producing a tonne of sugar canes from the plantation was higher than buying from the out-growers. RSF cannot increase its prices since there is already stiff competition from the importers of low priced sugar. Board chairman proposed further analysis of market penetration and skimming pricing strategies to establish the appropriate strategy that can save the situation. Out-growers sell a tonne of sugar cane at Frw 592,000 with delivery costs of Frw 11,500 per tonne while the cost of producing a tonne of sugar cane from the plantation is Frw 595,000. RSF incurs variable costs of Frw 105,000 to produce a tonne of sugar.

RSF's selling price (P) for a tonne of sugar is given by $P = 1{,}500 - 0.5Q$ (Frw '000') where Q is quantity of sugar produced in tonnes. RSF uses marginal cost plus a mark – up of 20% pricing approach. RSF incurred total cost of Frw 678.5 million to produce 800 tonnes of sugar in the year 2015 and Frw 783.5 million to produce 1,100 tonnes in the year 2016.

Gicu Agricultural Agencies (GAA) is ready to take up the lease of 49 years with trading terms similar to those of out-growers. GAA Executive Director has indicated that by the year 2019, GAA will be in position to supply 17,500 tonnes of sugar cane as they anticipate to get at least 70 tonnes per hectare. RSF will start to produce beyond maximum capacity as it has running contracts with out-growers which will increase additional variable costs by 2% and fixed costs by 8%. RSF General Manager is excited by GAA's proposal because it will help in implementation of the Just in time (JIT) purchasing system which had failed to take off because of the current system of operation. Delivery costs for sugar cane per tonne will increase by 0.15% and the associated costs per tonne will be affected by JIT as follows;

	Change	**By Frw**
Storage for sugar cane	Reduce	135
Direct labour of sugar produced	Reduce	508.5
Clerical and material ordering for sugar cane	Increase	73.25
Storage of sugar produced	Reduce	554.5
Machinery wear and tear for sugar production	Increase	280

In contrast the sugar cane plantation manager is not in support of leasing out the land and has instead proposed improvement in the farming methods to increase sugar cane plantation coverage by 60% and sugar cane production to 70 tonnes per hectare by the year 2019. This will lead to reduction in the cost of producing a tonne of sugar cane by 1% and out-growers will be forced to reduce their price by 5%. Additional variable costs and fixed costs for producing a tonne of sugar cane are expected to remain constant.

RSF uses Activity Based Costing (ABC) approach and operates a standard costing system.

Variance analysis for the year 2016 revealed sales and cost variances which showed performance inconsistencies in areas of price, volume, usage, efficiency and expenditure. Favourable variances were reported for labour rate and labour efficiency at Frw 6,128,000 and Frw 8,256,300 respectively.

Adverse price variances existed in sales margin and direct materials at Frw 15,732,000 and Frw 20,094,200 respectively. Volume variances were both favourable and adverse with sales margin at Frw 18,905,000A, variable overheads at Frw 3,657,000F and Fixed overheads at Frw 17,070,000A. Variance in direct materials usage of Frw 88,713,900A, variable overheads expenditure of Frw 5,423,000 A and fixed overheads expenditure of Frw 35,651,000A were also discovered.

2. Nyamagabe Dairy Farm (NDF)

NDF produces Jersey(J) and Zebu(B) types of milk. NDF operates under strict terms as per the dairy farming guidelines introduced by the Dairy Corporation (DC). The DC requires that milk is packed in standardized steel cans of 100 litres each. Selling prices are fixed and monthly production output is limited. The maximum permitted output of either product in June 2017 is 300 cans and NDF can produce a maximum of 600 cans for both products.

The budgeted data relating to the production and selling of the product per can for the month of June 2017 are as follows:

	J (Frw)	**B(Frw)**
Selling price	25,000	20,000
Labour	12,000	7,500
Salesmen's commission	5,000	3,000

Each can of J and B requires machine preservation and packaging. NDF budgeted to use a maximum of 70,000 preservation hours and 100,000 packaging hours at fixed cost of Frw 700,000 and Frw 1,000,000 respectively for the month of June 2017. The number of hours required in each of these sections to produce one can for consumption is as follows:

	J	**B**
Preservation hours	200	250
Packaging hours	400	250

Due to the controlled selling prices, the demand for the product exceeds the supply which has made it difficult for management of NDF to plan appropriately. NDF only sells milk from its dairy plants located at the farm where customers line up with their orders. However, this approach is becoming unpleasant and customers keep on complaining of the long queues and unfovourable weather conditions. This has made the demand for the milk uncertain and unpredictable. The Marketing Manager of NDF has come up with three options to provide a lasting solution to the problem.

The first option is to buy delivery trucks and distribute milk to the retailers in different towns. The second option is to contract a third party delivery service to deliver milk to customers after obtaining their orders.

The third option is to construct a shade with comfortable seats and remain serving customers at the dairy plants. The Marketing Manager believes that demand for milk will increase differently depending on the consumer behavior. There is a 35% chance of increase for the first option, 40% for the second option and 25% for the third option. The percentage increase of each type of milk depends on the estimated monthly profit per option.

The monthly profit to be earned for each of the possible options is as below;

Option	**J (Frw 000)**	**B(Frw 000)**
First	5,000	6,000
Second	5,000	8,000
Third	2,000	4,000

AIM Consultancy, a marketing research agency believes that it can provide perfect information on the potential consumer behavior in the available market to help NDF make a rational decision on the best option.

3. Nyamagabe Modern School (NMS)

NMS is a privately owned secondly school that was launched in January 2017. NMS started with three classes, **Senior One, Senior Two and Senior Five** with a uniform fees structure of Frw 230,000 per term and fifteen (15) fully qualified teachers equally divided in the three classes. Each teacher teaches for a maximum of 5 hours in a day from Monday to Saturday but on Saturday the classes are closed at 1:00 pm and thus teachers fail to make the 5 hours. However, the full 30 hours per week were paid for in term one.

NMS experienced cash flow problems in its first term of operation due to lack of proper planning and budgeting. The school has decided to appoint Kamanzi an experienced CPA to help in designing an appropriate school budget for second term. Kamanzi has proposed Activity Based Budgeting (ABB) system which has been approved by management with the hope that it will improve profitability. Information for the three classes for the last term is as follows;

	Senior 1	Senior 2	Senior 5	Total (Frw)
Fees Collections (Frw)	30,820,000	23,460,000	19,550,000	73,830,000
Administration				12,300,000
Accommodation				6,420,000
Teachers' Salaries				37,800,000
Feeding				57,780,000
No of teaching hours per day	30	30	15	

Kamanzi has proposed the allocation bases for overheads as below;

Administration	Number of Students
Accommodation	Number of Students
Teachers' salaries	Number of Teaching hours
Feeding	Number of Students

The class enrollment is predicted to increase by 15% in second term and teachers will be paid only 2 hours on Saturday. Teachers will be paid Frw 7,000, 8,000 and 10,000 per hour for Senior one, two and Five respectively. Each Student is to pay Frw 25,000 development fees towards school expansion. The term is assumed to take 3 equal months of 4 weeks each.

4. **Nyamagabe Resort Hotel (NRH)**

NRH provides hotel services especially to the tourists and to a few nationals. NRH has introduced modern performance evaluation techniques to match the current industry development trends.

NRH has a divisionalised structure with Kange (K) division providing accommodation and Mutoni (M) division providing restaurant services. Currently, K's sales are made externally but M sells to both K and external customers. Both divisions are considered as profit centres.

Division K

The division currently charges each customer Frw 35,000 for the room service with attributable variable costs per room including; labour costs Frw 4,000, materials from external suppliers Frw 3000 and telephone Frw 250.The division's annual fixed overheads incurred are Frw 410, 000,000.The annual sales volume for the rooms were 80,000 with maximum annual market demand of 80,000 rooms.

Division M

The current external selling price per buffet charged is Frw15,000 whilst the current selling price per buffet charged internally to K is Frw 14,000. The division incurs attributable variable costs per buffet including; labour costs of Frw 2,800 and material costs of Frw 950. Annual fixed overhead costs of Frw 240 million are incurred by the division. The maximum annual sales both internal and external are 200,000 buffets and maximum annual external demand of 180,000 buffets and maximum annual internal demand of 80,000 buffets.

The transfer price charged by M to K was negotiated some years ago between the previous divisional managers, who have now both been replaced by new managers. Head office only allows K to purchase food for its customers from M. Although the new manager of K believes that he could obtain food of the same quality for Frw 13,000 per buffet, if given the autonomy to purchase outside the company. M makes no cost savings from supplying internally to K rather than selling externally. NC Group Board has approached you, as a management consultant, with a range of concerns on how best they can improve performance:

REQUIRED:

(a) Determine RSF's optimal selling price per tonne of sugar and advise NC Group's board on whether or not RSF operated beyond its optimal capacity in the year 2016. **(8 Marks)**

(b) Using optimal selling price and estimates for the year 2019, evaluate the proposals made by GAA and sugar plantation manager to advise the board on best proposal for consideration . **(10 Marks)**

(c) Assess and advise the board on the decision of introducing JIT system in RSF in the year 2019. **(4 Marks)**

(d) Prepare an operating statement that reconciles the budgeted profit to actual profit for the year 2016. **(7 Marks)**

(e) (i)Using Linear Programming model (graphical method), advise the board on the NDF's optimal contribution for the month of June 2017. **(10 Marks)**

(ii) Determine NDF's net profit for the month of June 2017 **(2 Marks)**

(f) (i) Using decision tree analysis, evaluate the options proposed by NDF's marketing manager and choose the best option for board's consideration. **(9 Marks)**

(ii) Advise the board on the maximum amount that should be paid to AIM Consultancy **(3 Marks)**

(g) With the help of ABB approach, advise the board on the best school fees to be charged by NMS per student in each class for second term. **(13 Marks)**

(h) Assess the financial impact on profitability of each division and goal congruence, if division A is allowed to buy food externally. Advise the board on best course of action. **(12 Marks)**

(i) Discuss the application of market penetration and skimming pricing strategies by RSF to compete with low priced imported sugar. **(4 Marks)**

(j) Discuss the application of JIT purchasing system to the business processes of RSF **(4 Marks)**

(k) Discuss the controllability principle as used in divisional performance **(3 Marks)**

(l) Discuss any two challenges that can be addressed by transfer pricing. **(2 Marks)**

(m) Discuss positive effects of information technology (IT) developments to a business environment. **(4 Marks)**

(n) Explain the process of conducting competitor monitoring and analysis. **(5 Marks)**

(Total 100 Marks)

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